

MARS

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OBSERVATIONS

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Some Personal Reminiscences of Great Mars Observers. II

By

William SHEEHAN

When Steve O'Meara and I arrived at Pic du Midi, we were informed that the legendary French planetary astronomer and balloonist Audouin Dollfus was going to be joining us. His had been a name to conjure with since, at about ten years old, I first began to read all the books about planets I could get my hands on at the public library.

One of the first books I read about Mars, Franklyn Branley's "*Mars: Planet No. Four*," discussed his resolution of the "canals" into splotches and irregular features at Pic du Midi. A little later, I got hold also of the book "*Planets & Satellites*," in the University of Chicago series on the Solar System edited by G. P. Kuiper and Barbara Middlehurst, which included a chapter he had written and many of his high-resolution drawings of the surfaces of the planets and their satellites. Two years later, during the course of my first series of observations of the Earth's passage through the plane of Saturn's rings (the first such occurrence of my lifetime), I was electri-

fied to learn of Dollfus's discovery of Janus, the tenth satellite of Saturn. At the time, Dollfus was still a relatively young man - he was only 42.

That I should one day meet him would have seemed highly improbable at that time.



I regarded him with awe - even reverence - and imagined him as an aloof and unapproachable figure. But when I published "*Planets & Perception*" in 1988, he reviewed it in *l'Astronomie* (April 1990)-and wrote rather effusively of it. At the time I was a solitary scholar working in isolation; receiving such

feedback from a legend had me over the Moon! I began a correspondence with the "aloof and unapproachable figure," and discovered him to be warm and amiable and encouraging of others; someone who was dedicated to passing on his passion for astronomy to others who were similarly enthusiastic. Needless to say, it was a turning point in my life that my work should be taken seriously - and regarded as being somewhat of value - by such a great man.

Dollfus had been born on November 12, 1924 - exactly 8 years to the day after another childhood hero, Percival Lowell, died. The son of a famous aeronaut, he became interested in astronomy at six, built his first refracting telescope at age 14, and went on to study at the Observatory of Paris-Meudon, where he was mentored by the great Bernard Lyot, who is best remembered for perfecting the coronagraph which he deployed at Pic du Midi in 1930. He was also the one who pioneered planetary observations at Pic du Midi when, in 1941, he realized that the site (because of its high altitude, 2877m, and its location at the exact top of a mountain which is snow covered and isolated ahead of the Pyrenees range) offered unusually good conditions for planetary observation.

In fact, Lyot was building on a proud tradition, for French planetary astronomy had been in the forefront since the nineteenth century. His forerunners included Camille Flammarion, whose observatory at Juvisy was dedicated to the study of the Solar System, and René Jarry-Desloges, a kind of "Percival Lowell of France" a man of means and enthusiasm who searched throughout France and Algeria for the best atmospheric conditions in which he and his gifted assist-

ant Georges Fournier could carry out high-resolution visual studies of the surfaces of the planets.

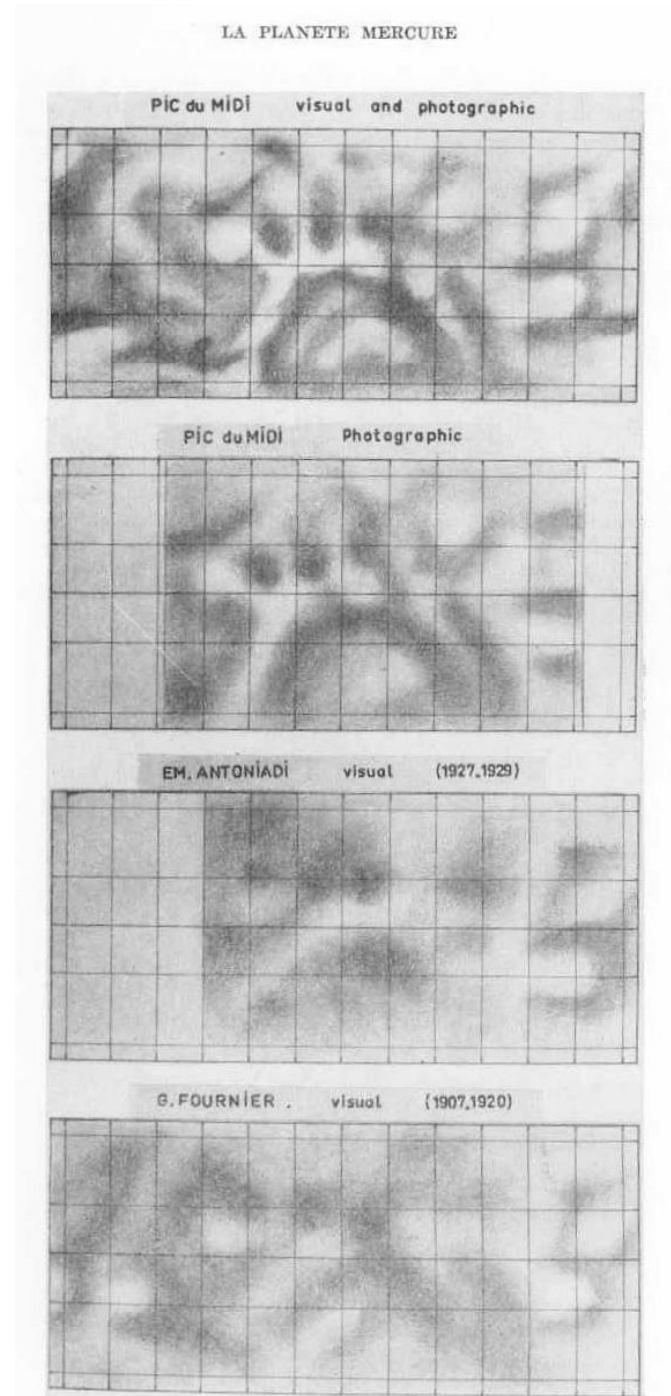
Dollfus, with his decades of experience, was, of course, expert in all the factors affecting planetary observation, which had been the subject of *"Planets & Perception."* He was keen to discuss these things with me, and without condescension patiently answered my questions. Perhaps he flattered me; however, he said that he had always wanted to meet me, and knowing I was here had been one of the reasons he had come from Paris just then (the other, perhaps more weighty reason, was to obtain images of the Sun with a new instrument). He was tall, gaunt and wiry, and dressed punctiliously in the French style with a wool sweater and a trademark French beret. He was approaching seventy, and was very careful, when he first arrived at Pic du Midi, to walk very slowly, and to allow himself to acclimate to the altitude. (As an experienced balloonist - who still holds the altitude record for a balloon ascension in France - he knew very well the importance of that.) He combined the enthusiasm of the amateur with the meticulous attention to detail of the professional.

I hadn't realized until I met him that this legendary observer of the planet, though a man with legendary eyesight, was actually blind in one eye. He was in that regard rather like Schiaparelli who also had only one good eye. Obviously, this presented no handicap at the eyepiece, and may even have lent him an advantage: perhaps for someone like Dollfus, the good eye acquires greater powers as a result of annexing some of the cortical space normally shared by two.

Over lunch, Dollfus and I discussed some of

the legendary figures of French planetary astronomy. He had met Antoniadi, and admired him, but did not know him well. That was not unusual; Antoniadi was a loner, and insisted on keeping his own counsel (it is only recently that Richard McKim has been unearthing fascinating biographical details about the private Antoniadi, which we are hoping to publish in a book currently under way). He spoke warmly of Georges Fournier, whom he did know (he died in 1954). Fournier, he said, was a very modest, retiring man, and a first-rate observer. He had suspected from his observations of Mercury (in 1907 and 1920) that the rotation was different from the 88-day period that Schiaparelli had first proposed in 1889. After the radio astronomers discovered the true, 59.85 day rotation period in 1965, Dollfus produced a cylindrical projection of Mercury based on Fournier's drawings, which is shown here. It compares favorably with a cylindrical projection based on observations and photographs at Pic du Midi by Camichel and himself [as well as the recent cylindrical projection based on CCD images published by John Boudreau, Alessandro Manara, and myself (see *Sky & Telescope*, Mar 2011, p.33). See LtE.] Unfortunately, Fournier never received the recognition that he deserved (alas, this is still the case!).

Dollfus also spoke warmly of Jean-Henri Focas (1909-1969) with whom he had worked closely. Like Antoniadi, Focas was a Greco-French astronomer. He was a native of the Greek island of Corfu (his given name was Ioannis), and became a passionate planetary observer with the 25 cm refractor at the National Observatory of Athens. Like Antoniadi, he would not accept any results short of perfection. Aware of his talent, Lyot encouraged



him to come to France to observe the planets at Meudon and Pic du Midi. However, his arrival was delayed - in part because of Lyot's sudden death of a heart attack in Cairo in 1952, when he was returning from an eclipse expedition to the Sudan. He arrived at last in 1954, when Mars was well placed, and Dollfus was hard at work observing Mars with the famous 61 cm folded refractor ("refracto-reflector"). The door sprang open. Focas introduced himself and,

without more ado, took his place at the eyepiece. At once, with great confidence and skill, he produced what Dollfus described as "the most wonderful" drawing of Mars!

Focas's observing books, except his original maps (returned to Greece) are at Meudon. His Mars maps are the most detailed of the pre-spacecraft era. Unfortunately, he was, like many of his countrymen in both Greece and France, a chain smoker, and died young - just before his sixtieth birthday, which would have taken place on July 20, 1969, the day that Neil Armstrong and Buzz Aldrin were on the lunar surface. His name has been honored with a crater on Mars.

I discussed with Dollfus some of the drawings we had made with the 1-meter Cassegrain (it was Monday when he arrived; we had braved jet lag and observed all Saturday night, and then Sunday night, we had remained awake and on the *qui vive* hoping that the clouds and storms that were swirling around the peak would dissipate, which they did - briefly, around 4:30 am - allowing us to catch a brief glimpse of Mimas hanging off the rings. By the time I met Dollfus, I probably looked like Robinson Crusoe, or a mad man; I hadn't slept for three nights!).

It is said, apparently with truth, that a man's head can turn white in a single night. Though my hair didn't change color, a single night on the 1-meter Cassegrain had already seasoned me greatly in my experience of planetary observing, and showed me the error of my ways on several of the points I had puzzled over when writing "*Planets & Perception*."

One was the vexed question of the relative advantage of large vs. small instruments for planetary observation. I knew about contro-

versies such as that between the British amateur Stanley Williams, who used a six-inch reflector and to record small diffuse spots on Saturn, vs. E. E. Barnard, who failed to make them out with the great refractors at Lick and Yerkes. The iron and inexorable limits of diffraction alone have often regarded as the *sine qua non* of what can be seen in a given telescope at a given time; because of atmospheric seeing, a large telescope is rarely able to perform up to its diffraction limit, and the reason for this is that blurring produced by larger and stronger cells of air turbulence are averaged over a larger lens or mirror. This explains why Percival Lowell routinely stopped down the 24-inch refractor to 12 to 16 inches. On the other hand, that angle doesn't explain why Lowell's nemesis E. M. Antoniadi, using the full aperture of the 33-inch refractor at Meudon, made out a host of subtle details that completely eluded Lowell's grasp. When I wrote "*Planets & Perception*," I decided to side with Antoniadi and Barnard against Lowell but in doing so, incurred the wrath of a number of astronomers, including one - a very prominent Mars observer at Lowell Observatory - who wrote to me, "I've never read '*Planets and Perception*' and don't plan to. I had heard that in it you criticized Lowell for stopping down the telescope. That was really all that I wanted to know about it..." (Since I was well aware that I had a lot to learn, I accepted his censures, and we later became good friends; this astronomer, Leonard Martin, later wrote a very positive review of my book "*The Planet Mars*," in which I corrected many of the oversights of my earlier work.)

On my first night with the 1-meter tele-

scope at Pic du Midi, I realized that the real advantage of such large telescopes was mainly in their revealing subtle nuances of color - thus, their advantage was in seeing not **that** something was present on a planetary disk (a line, a dot, an outline) but **what** it was. In other words, the telescope revealed not just the existence of detail but its form (see Note below). The palette of colors on the planets with the 1-meter Cassegrain was astounding - it was as if I were looking at a canvas by Monet -- and it was this - not the diffraction-limit - which made the views I had through it such a revelation. In particular, I was stunned by the intense cerulean blue of the southern hemisphere of Saturn (the hemisphere that was then tipped away from the Sun). (Interestingly, Steve saw the same hemisphere as greenish. No doubt there are significant subjective differences in color-perception as for all other sensations.)

At lunch, I had mentioned that Steve and I had been impressed by the vivid blueness of the southern hemisphere to Dollfus. He responded simply: "As usual." He often saw the polar region as blue-grey.

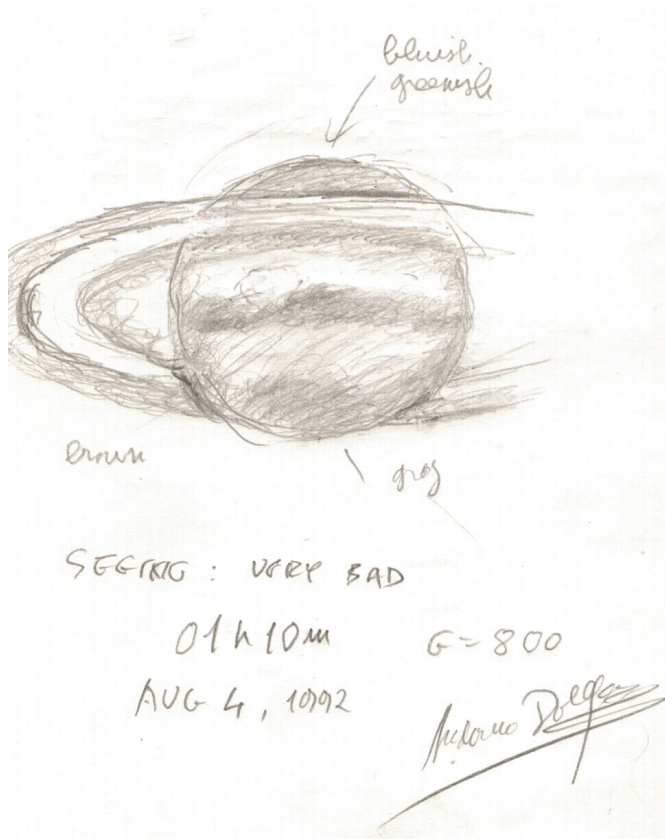
Since 1992, I have paid particular attention to the blue hemisphere of Saturn (and it flipped from southern to northern hemisphere after the ring-plane passage of 1995 and has now flipped again after the ring-plane passage of 2004). It was that beautiful observation of Saturn with the 1-meter that effectively created a sustained interest. The effect is real; the planet, a bit surprisingly does present subtle seasonal effects dependent on solar insolation.

Though the mountain was buffeted by thunderstorms that afternoon, conditions cleared in the evening - an example of the

"Dollfus effect," which - perhaps without systematic data to support it - other astronomers on the mountain claimed was the statistically high average of good weather that was encountered when Audouin was present. So for the first time I had a chance to observe with the legend. The wind was howling; and yet the seeing was remarkably steady (for reasons that Dollfus later explained to me).

We started with Saturn; the magnification was 800× and sometimes 1200×. On the globe, a small white oval appeared in the northern part of the Equatorial Zone. The rings resembled Lyot's famous drawing: the crepe ring was brilliant and ice-blue; the Cassini Division - rather than being jet-black - was greyish, and lighter than the dark shadow or the background sky; subtle intensity differences in the B ring seemed to ripple into numerous delicate divisions which were impossible to draw, and we saw several broad shadings in the A ring as well as the prominent sharp division near the outer part that is officially known as "Encke Division" (Dollfus hastened to add that he was not on the IAU commission that had approved the confusing nomenclature for Saturnian ring features, since Encke never saw this particular feature). Fittingly, with the visual discoverer of the "spokes" also present in the dome, we were treated with some very obvious spokes on the morning ansa. Almost like a ghostly aurora - or an amoeba - their finger-like projections seemed to move and change from hour to hour and night to night (again, our impressions differed: I saw them as streaks, while O'Meara thought they looked more like the petals of a flower).

Dollfus made a sketch of Saturn as it appeared to him, and I still retain it; he sketch-



ed it freehand, and it was very beautiful. He did not want to spend very much time on it, since he did not wish to deprive us of the little time we had to observe. I, in turn, presented him with a color drawing of Saturn. He said, with the graciousness that was characteristic of him, "For your beautiful drawing in color of the planet Saturn, you are to be congratulated. It is a fond recollection of our observing night together."

Dollfus left and went to bed. Afterwards, Steve and I looked at Uranus, Neptune, and Mars (it was then very far away, a small gibbous "Fabergé egg" of a world; I shall perhaps talk about that in another article).

Next day - our last together - we talked about some of the aspects of visual observing at Meudon and Pic du Midi. It was a great pleasure to talk to the "Master." (Indeed, it is likely that there will never again be anyone who understands visual planetary observing as well as he did.)

He affirmed that the real advantage of the

large aperture had to do with its greater ability to reveal colors and forms, and was not only a matter of diffraction. Moreover, it was all very complicated, since "seeing" is a three-dimensional phenomenon. The image is in focus more of the time when the depth of field is larger, which is one of the reasons that a long focal length was helpful in observing planets. (Incidentally, he pointed out that in addition to other advantages, stopping down the telescope increased the focal ratio and increased the depth of field.)

At Pic du Midi, he said, he found that over 47 years of observing that roughly half of the nights he spent there featured clear skies and seeing sufficiently good to allow at least one useful observation. It was the experience of astronomers at Pic du Midi that a north wind (continental instead of maritime air) was associated with bad seeing, but that during fine weather, the seeing generally improved steadily as the wind from the north falls and the wind direction rotates to the southwest. Also a rise instead of a drop in temperature during the night seemed to be associated with good seeing. The weather was usually cloudiest in April and May, and the month with the most clear nights was July. Another aspect of Pic du Midi was that, when the seeing was very good, it usually remained so for several consecutive nights and even a week; this seemed to be an aspect that was rather unique to Pic du Midi, and made the site exceptional for planetary work - not least because it allowed one to carefully plan work for the next night in the prospect of good seeing. In contrast, at Meudon the situation was more "classical." But even so, he found with the Grand Lunette the seeing was often satisfactory, and (for whatever reason) rather

better than average in this respect.

At this point, we shook hands, and parted company. Though we continued to correspond regularly for twenty years until his death on October 1 this past year, it was the first and last time we actually met (he was, alas, in hospital during the IWC MO Conference at Paris Observatory and Meudon on the centennial of E. M. Antoniadi's celebrated observation of Mars with the Grand Lunette on September 20, 1909).

He was one of the last planetary astronomers of what truly was the classical era. Of Audouin Dollfus - astronomer, aeronaut, and friend extraordinaire - I can think of no words more fit than those of *Hamlet* (I, ii):

"He was a man, take him for all in all, I shall not look upon his like again."

(Note)

Recently, Rodger W. Gordon sent me an interest-

ing letter by George Hamilton, an observer of Mars who worked with Percival Lowell until his death and later with W. H. Pickering in Jamaica. Entitled "An Introspect," Hamilton wrote it from Jamaica at the end of his observing campaign at the Perihelic Opposition of 1924, and clearly insists on the importance of color-perception in planetary work. He writes, in part: "Bearing in mind the dictum of Percival Lowell as to the personal qualifications and the conditions necessary to the successful observation of the Planet Mars I submitted myself to a vigorous self-examination in order to determine my fitness.... Every optician will tell you that the sense of sight varies in different men as it does in animals; and that the range of vision extends from that of the imperfect organ of the mole to that of the keen eye of the eagle. But what the optician will not tell you is the influence of colour upon the correct determination of form. His tests are made by black letters and the gradations of colour blindness have to be specially tested by colour experts." I can only add, Bravo! □

CMO 09/10 Mars Note (9)

Thawing of the North Polar Cap in 2009/2010

The apparition in 2009/2010 was an opportunity after an age for being able to observe the thawing or recession of the north polar cap (npc) from the period before the spring equinox. The images encountered were however poor because this apparition was near aphelic and the terrestrial season was winter from the Northern Hemisphere. We here try however to describe the decreasing trend of the npc using the results of our own observations and measurements of the npc sizes, though the outcome does not look so rigid.

Observations were carried out by Masatsugu MINAMI (*Mn*) at Fukui by the use of a 20cm refractor more than 400 times, but a lot of results are useless: The measurements of the sizes of the npc

on the discs were made by *Mn*, while the calculations by the use of the formula given by Audouin DOLLFUS were made by Akinori NISHITA (*Ns*): DOLLFUS's formula is the one that appeared in *Icarus* 18 (1973) 142 and it was cited in CMO in earlier times in CMO #003 (25 Feb 1986 issue) p0017. Since then we repeatedly wrote about it including the method how to derive, and hence here we just put forward the formula only.

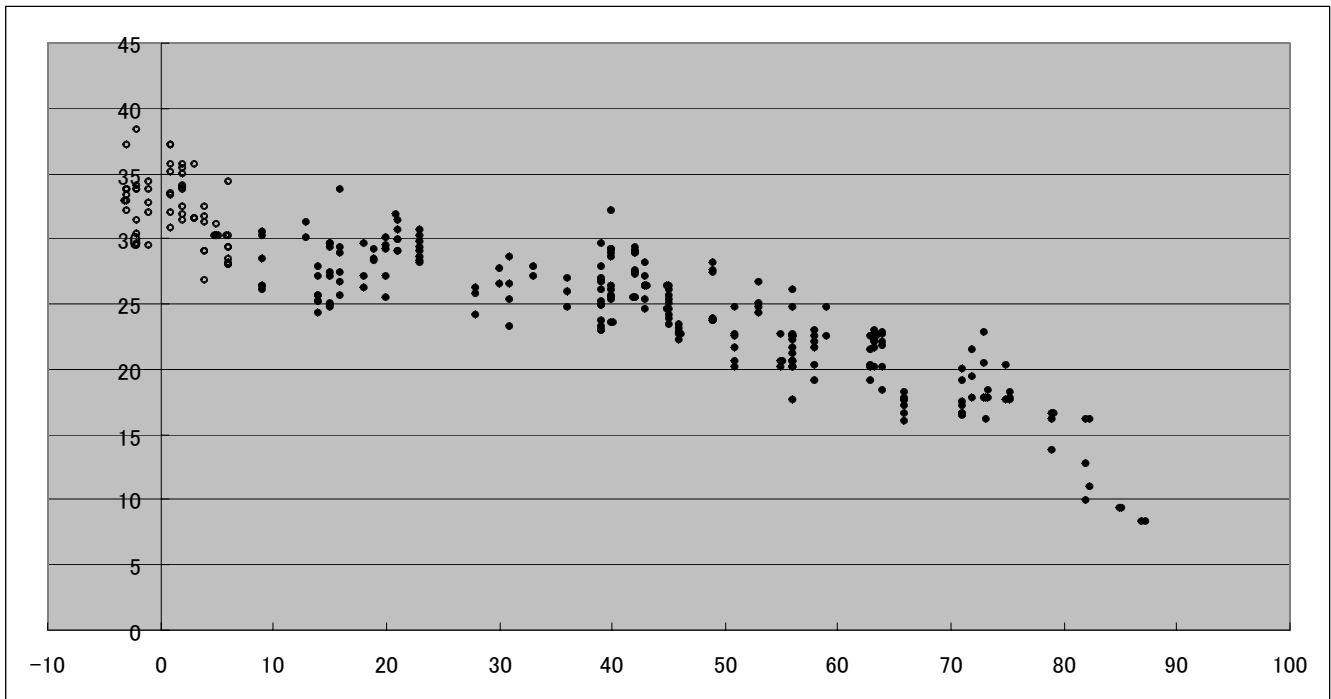
Let ϕ be the central latitude (the tilt of the north pole towards the Earth) and ψ be the half angle of the npc. Then ψ is given by the formula

$$\psi = -|\phi| + \arccos[1 - (d/r)],$$

where d is the depth of the npc and r is the radius of the drawing disc. Hence, the latitude of the snow line Θ is given by

$$\Theta = (\pi/2) - \psi = (\pi/2) + |\phi| - \arccos[1 - (d/r)]$$

In the graph here described, the column (ordinate) is Θ . The horizontal line (abscissa) denotes the season λ in Ls. For example 20 implies $\lambda = 020^\circ$ Ls, while



20 on the ordinate implies $\psi=20^\circ$, where $\psi=90^\circ-\Theta$.

It should be noted here that we disregarded any EW width of the npc. If we refer to the EW length, the large error should occur when the phase angle is large. The depth is on the other hand affected little by the phase angle, and hence the error should be less.

As to the predictions of the trend of the npc this season, CMO gave two articles in CMO #357 (25 April 2009)

(Forthcoming 2009/2010 Mars (1)) which is cited in <http://www.hida.kyoto-u.ac.jp/~cmo/cmomn5/CMO357.pdf> and in CMO#363 (25 October 2009) (Forthcoming 2009/2010 Mars (8)) which is readable in

<http://www.hida.kyoto-u.ac.jp/~cmo/cmomn5/CMO363.pdf>

See also Report #24 in CMO #289 (25 March 2004): <http://www.hida.kyoto-u.ac.jp/~cmo/cmomn3/289OAAj/index.htm>

As a general discussion, the following may be much instructive: Forthcoming 2007/2008 Mars (14) in CMO#338 (25 Nov 2007)

http://www.hida.kyoto-u.ac.jp/~cmo/cmomn2/2007Coming_14.htm

Let us again move on to the present situation of the graph of this apparition: We should first note that since *Mn* observes every 40 minutes a day there were obtained a lot of data from different angles at the same λ (nearly two terres-

trial days): hence the data are divergent since the npc is not necessarily roundish, or on the contrary it may be rather dubious if the data a day or two give the same values. Especially the presence of the north polar hood (nph) gives a zigzagged data. We depicted the data before $\lambda=010^\circ\text{Ls}$ by white circles since they are affected much by the nph (we should say the phenomenon will continue until around $\lambda=020^\circ\text{Ls}$). Furthermore as the npc began to thaw, the form of the npc looks roundish but its center is not exactly at the north pole, and it looks to deviate to the side of M Acidalium. So when M Acidalium is seen inside the visible disc, the npc (plus a while cloud) looks to be larger. In our case at around $\lambda=020^\circ\text{Ls}$, M Acidalium was visible, and also at around $\lambda=040^\circ\text{Ls}$ it was so: The graph show the situation and the average line may turn out to be wavy.

If compared with the recession line obtained by DOLLFUS in 1946~1950 (see e g CMO #109 (25 Sept 1991)) ours this time looks slightly higher (larger). At around $\lambda=020^\circ\text{Ls}$, DOLLFUS gives the data as $\Theta=22^\circ\text{N}\sim28^\circ\text{N}$ while ours does $\Theta=25^\circ\text{N}\sim30^\circ\text{N}$, and at around $\lambda=040^\circ\text{Ls}$, DOLLFUS gives $\Theta=22^\circ\text{N}\sim23^\circ\text{N}$ while ours $\Theta=23^\circ\text{N}\sim30^\circ\text{N}$. This range belongs to the so-called BAUM's plateau, in which the averaged value gives $\Theta=26^\circ\text{N}$.

At $\lambda=066^\circ\text{Ls}$, we observed in a rather moderated condition where Tharsis Montes were visible at $\omega=116^\circ\text{W}$, and we obtained the result $\Theta=16^\circ\text{N}$ which lies inside the depth of DOLLFUS's results.

The presence of the BAUM's plateau has been discussed associated with the preceding situation of the dusts. We don't think yet we can say something about it this time, but we consider that the plateau tends generally to exist if it is wavy. At least the speed of the thawing has been not fast: At the early spring the atmosphere is still cold and the wind

system must be weaker. As to the relation with the general grand circulation of Martian atmosphere, refer to an article abovementioned [Forthcoming 2007/2008 Mars (14) in CMO #338 (25 Nov 2007)].

Finally we note that Takashi NAKAJIMA (*Nj*) and *Mn* who alternatively observed during the period consistently felt that the recession of the npc was quite slower this apparition. However around from $\lambda=085^\circ\text{Ls}$ it looked to thaw rapidly to show a tiny npc. The observations of *Mn* ended at $\lambda=124^\circ\text{Ls}$ when $\delta=4.8''$.
(*M MINAMI & A NISHITA*)

Letters to the Editor

●.....**Subject:** *my book is finally out: Geographies of Mars*
Received: *Thu 20 Jan 2011 08:48:37 JST*

Dear friends & colleagues, I am happy to report that my book *Geographies of Mars* is now in print.

University of Chicago Press did a beautiful job with the cover and images throughout, and I am grateful for having finally arrived at the end of a long road!

I published a new page on my UNM website with book details, so if you are looking for any info, try this link:

http://www.unm.edu/~mdlane/index_files/books.htm

Best,

Maria Lane (Univ of New Mexico, USA)

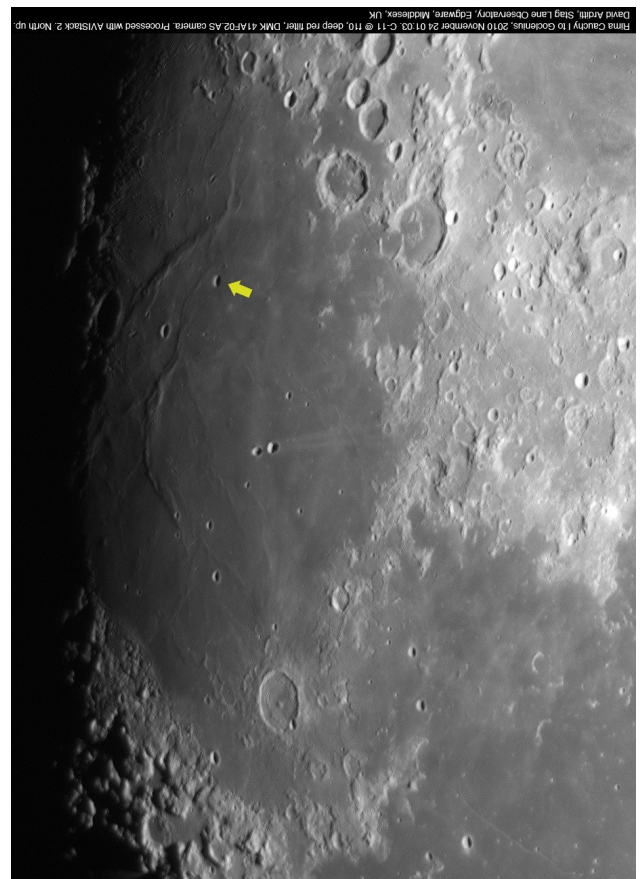
●.....**Subject:** *Lunar images*
Received: *Sat 29 Jan 2011 19:03:10 JST*

Dear Dr. Minami, Thank you for your forwarding to me David ARDITTI's fine lunar images. On his image taken on 24 Nov. 2010 at least five rimless craters are recorded. The arrow I added indicates the crater Ibn Battuta in Mare Fecunditatis which is the eastern most one in "A Possible Lunar Volcanic Belt? Seven Fresh Rimless Craters in a Line" in my essay in CMO/ISMO #380.

ARDITTI says that he likes to take lunar images at his C-11's prime focus with DMK41 as it captures

quite wide areas while achieving as much resolution as poor seeing will allow. I agree with him; I also used to take lunar images at my C-14's prime focus with Mutoh CV-16L camera as "screening shots" to find interesting features to be checked later in detail.

Attached is one of such screening shots taken on 25 July 1997. I am also attaching pictures showing my observatory, and my C-14 and imaging systems (chiefly for taking deep sky objects). (See the next page.)





As to the garbling Masami MURAKAMI called Japanese CMO reader's attention in his latest email, it occurs every time I access to the CMO Japanese version, but it resolves by clicking the updating icon. Best wishes for your health,

Reiichi KONNAI (Fukushima, Japan)



●.....*Subject: Re: Happy Birthday to you*
Received: Mon 31 Jan 2011 08:48:49 JST

Dear Masatsugu, Thanks you for the birthday greetings and for the interesting history! I had often wondered about the naming of years after animals. Now I know! The video was excellent.

My wife is not doing too well at the moment. Thanks you for your concern. She is back on chemotherapy and will hopefully have another good response. She was born in the Year of the Dragon, so she is tough! Best,

Don PARKER (Miami, FL, USA)

(*Note*) Don and I were born in a Rabbit year, and this 2011 is the Rabbit year, since every 12 years any of the animal signs comes back. (*Mn*)

●.....*Subject: Re: Next article*
Received: Tue 01 Feb 2011 22:30:40 JST

Dear Masatsugu, Lots to do at the moment, but I will try to do what I can to get this article to you by the dead line. In haste, but as always with best wishes and kind regards,

○.....*Subject: Dollfus reminiscences*
Received: Wed 09 Feb 2011 07:44:24 JST

Dear Masatsugu (and Richard), Please note the attachment; it contains some of my reminiscences of my time with Dollfus in 1992. Though we corresponded for over twenty years, I never met him again.

Hope this meets your need for the next issue of ISMO. I can send over a few images in due course.

Kind regards,

○.....*Subject: Possible illustration for article*
Received: Thu 10 Feb 2011 08:47:41 JST

Dear Masatsugu, I am attaching some cylindrical projections of Mercury made by Dollfus and Camichel based on their work at Pic du Midi (photographic and visual) and also based on the work of Antoniadi and Fournier. These were made after the 58.65 day rotation was worked out. Fournier is mentioned in the text. I will also send an image of the cylindrical projection based on CCD images by my colleague John Boudreau for comparison. This is a subject (one of many) I discussed with Audouin over the years.

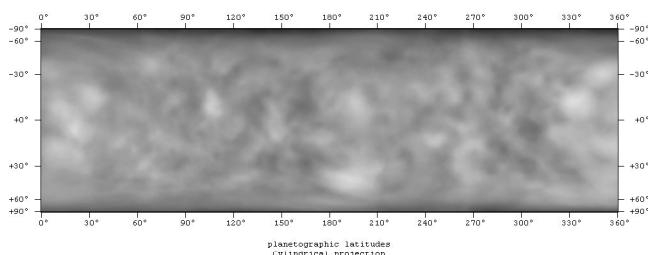
I will also send a small drawing that Professor Dollfus made during the night that Steve O'Meara and I observed Saturn at Pic du Midi (August 4, 1992). We discovered an oval white spot that may have been related to the spoke activity that we noted at the time. I believe it was not seen elsewhere.

Finally, I send a portrait of Audouin Dollfus which shows him at a celebration of his 80th birthday.

I will send these in seriatim to avoid overloading your server. Kind regards,

○.....**Subject: <no subject>**

Received: Thu 10 Feb 2011 08:56:15 JST



Masatsugu, Here's the Boudreau CCD map we used for the Schiaparelli conference in Milan and was published in *S&T* recently.

○.....**Subject: Re:RE:Possible illustration for article**

Received: Thu 10 Feb 2011 22:46:30 JST

Dear Masatsugu, I didn't cite much of Dollfus's Mars work because Mars was not in good position when I observed with him, and the subject was "personal reminiscences." Also I knew more already about his Mars work so was more interested in discussing his work about other planets. He has described his Mars work in the PowerPoint he created for the One Century of Mars Observations (IW-CMO) at Meudon which, owing to ill health, he was unable to attend:

http://www.hida.kyoto-u.ac.jp/~cmo/cmomn5/IWCMO_Dollfus.pdf

I believe it may be worthwhile to publish that and other documents in ISMO in future.

Mars had an apparent diameter of just 7.2" when I observed it at Pic du Midi in 1992. This however meant that I could test the supposed observation of craters under these conditions (*à la* Mellish), and the result was negative. Perhaps, when it is time to publish the essay on Mellish that I sent to you, we can add something about that observation--the upshot is however that, as with sightings of the rings of Uranus and Neptune by visual observers, Mars in the olden days was an ambiguous object, and one could imagine things--in some cases they proved to be correct inferences. There are craters on Mars. Nevertheless, they cannot be visualized as craters in the classical sense (of Galileo's observations of the Moon, for instance) from Earth, but only from analogy based on their shape, thoughts about the history of the formation of the Solar System, etc.

Kind regards,

Bill SHEEHAN (Willmar, MN, USA)

●.....**Subject: Re: CMO/ISMO #380**

Received: Thursday, 10 Feb 2011 3:56 AM

To: "Masami MURAKAMI." My husband (David ANDERSON) passed away last August, so you can remove this email from your list. He enjoyed visiting the site and would often call me to his computer to see the pictures. Thanks you.

Jean ANDERSON (SC, USA)

(Note) We were very sorry to learn of the death of David ANDERSON. By return email, we expressed our sincere condolences in his wife's great loss. David's last set of images was made on 21 February 2010. (Eds)

☆☆☆

TEN YEARS AGO (186)

---CMO #240 (25 February 2001) pp2907~2930---

<http://www.hida.kyoto-u.ac.jp/~cmo/cmomn0/cmo240/index.htm>

The 4th report is given; the period from 16 Jan 2001 ($\lambda=104^\circ\text{Ls}$) to 15 Feb 2001 ($\lambda=118^\circ\text{Ls}$): 6 Japanese persons and 4 foreign observers sent the observations. Mars attained the western quadrature on 13 Feb. The apparent diameter δ was $\delta=7.0''$ at the end of the period, and ϕ became to be shallow around $\phi=09^\circ\text{N}$ so that the observations of the npc became difficult though the important period of the npc. On the other hand Hellas was whitish bright and Elysium was also bright at the afternoon side.

<http://www.hida.kyoto-u.ac.jp/~cmo/cmomn0/01Repo04/index.htm>

The second article was "1998/99 Mars CMO Note (18)" where a dust streak on 16 Apr 1999 (125°Ls) near M Erythraeum was described. Historically a similar phenomenon was observed in 10 June 1922 ($\lambda=187^\circ$ Ls). Also on 13 April 1984 ($\lambda=132^\circ$ Ls), DOLLFUS caught another one by a 2m telescope at Pic-du-Midi, and the set of photos was cited. <http://www.hida.kyoto-u.ac.jp/~cmo/cmomn0/99Note18/index.htm>

Thirdly "FORTHCOMING 2001 MARS" corner gives two articles, No.7 and No. 8: No. 7 treated "Deviation of the spc from the pole" as in <http://www.hida.kyoto-u.ac.jp/~cmo/cmomn0/01Coming07.htm> and No.8 was given by NISHITA on "Ephemeris for Observations of Mars in 2001 (III)"

The former article pointed out that the thawing of the spc became irregular and deviated from the pole from $\lambda=230^\circ$ Ls to $\lambda=240^\circ$ Ls: This is based on the Viking data compiled by P B JAMES, & the data from 1905 to 1956 given by G E FISCHBACHER. In 2001, $\lambda=230^\circ$ Ls could have been reached at the beginning of September, but in reality the global dust storm occurred in June 2001 and in September the spr was still obscure: The CMO back numbers treated these items several times hitherto in #007 p0047: Aspects of the spc as seen by Vikings (2), #008 p0057: Aspects of the spc as seen by Vikings (3), #018 p0146: MARS REPORT in Sept 1986, #029 p0225: The spc boundaries observed in 1986. I, #040 p0335: The spc boundaries observed in 1986. II, #111 p0963: On the detachment of Novus Mons in 1988, #115 p1004: On the variation of intensity inside the spc in 1986 & 1988. See also the cover of CMO #029.

LtE contains emails from WASIUTA (VA), MELILLO (NY), COLVILLE (Canada), PARKER (Fl), WHITBY (VA), PEACH (UK), HERNANDEZ (Fl), and domestically TSUNEMACH (Yokohama), MORITA (Hatsukaichi), ISHADOH (Naha), HIGA (Naha).

TYA(66) summarises CMO#102 (25 Feb 1991): 20 years ago Mars was going away and at the end of February it was near at the eastern quadrature. The season was $\lambda=020^\circ$ Ls on 15 Feb 1991, and still 9 observers were active (131 observations). (Mk & Mn)

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MARS

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CMO 2001 Mars Report # 04 OAA Mars Section

THOUGH we have not been so conscious, *Antares* has already been so near the planet Mars implying that Mars is now quite low. On 16 January 2001 the apparent declination of Mars was $-14^\circ 46'$ while it was down to $-19^\circ 11'$ one month later on 15 February. On 15 March it will go further down and read $-21^\circ 48'$. The planet was found quite near β Scoopi on 20 February, as if they were a double star.

On 13 February, Mars attained the western quadrature, and we can now observe the planet at meridian at dawn. AKUTSU (Ak) joined. We hear MURAKAMI (Mk) also started and WHITBY (SWb) frequently points the telescope to the planet. Don PARKER (DPk) is already very active and made his Happy Birthday observation during this period.

☆……火星は、由天秤座侵入天蠍座、順行。14日西方照(台湾天文之友、2001年二月 No179より)、實際いつだったか斜りにアンタレスが近く昇って来ているので吃驚した。20Febには蠍ベータ星の近くまで降りて、二重星の様に見えていた。13FebGMT(14日JST&TJ)には西照となり、これからは南中の火星を覗い内から狙える。時期は最悪で、高気圧はなかなか訪れない。阿久津富夫(Ak)氏からは第一報があったが、村上昌己(Mk)氏は未だ待機中であった。然し、18Febには観測が達したようで、21Febには三國とピッチを上げて居る様である。ホイットビー(SWb)氏も既に何度も観望している由(LtE)。パーカー(DPk)氏は期間中六・七二重の誕生日を迎えたが、既に見事な活躍である。

THE present report deals with the period from 16 January 2001 (04°Ls) to 15 February 2001 (118°Ls), during which the apparent diameter δ went up from $5.7''$ to $7.0''$. The central latitude ϕ was down rapidly from 16° N to 09° N, and the north polar cap is now on the edge. The phase angle ϵ increased from 35° to 38° . If the condition allows, it is now possible to start to watch the surface from 3 o'clock Local Time.

☆……今回は 16 Jan 2001 (04°Ls)から 15 Feb 2001 (118°Ls)迄の観測を概観する。この間、視直径 δ は5.7"漸増為7.0"。中央緯度は 16° Nから 09° Nに急降し落ち、北極冠は検出も難しくなる。位相角 ϵ は 35° から 38° となった。観測は条件が好ければ午前3時から可能である。ただ、視直径は16Janに $-14^\circ 46'$ であったものが、15Febには $-19^\circ 11'$ まで降りて居る。15Marには $-21^\circ 48'$ まで落ちる。

THIS time we acknowledge receipt the observations from the following observers:
☆……今回報告を頂いた観測者と報告数は次の通りである。

2 9 0 7

C M O Fu Ku I

T NAKAJIMA (Nj)

★ We would like to express our sincere thanks to Reiichi KONNAI (444), Takaya OSHIRO (445) and Tohru IWASAKI (446) for their kind donations for CMO/ISMO.

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